

DON'T ASK, DON'T GET! Make sure you OWN this Similarity Review → TEST tomorrow!

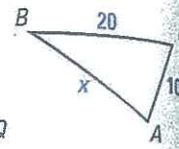
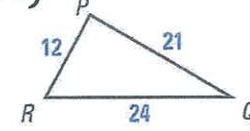
In Exercises 1–3, use the diagram where $\triangle PQR \sim \triangle ABC$.

1. List all pairs of congruent angles. $\angle P \cong \angle A$, $\angle Q \cong \angle B$, $\angle R \cong \angle C$
2. Write the ratios of the corresponding sides in a statement of proportionality. $\frac{PQ}{AB} = \frac{QR}{BC} = \frac{PR}{AC}$
3. Find the value of x .

$$\frac{PQ}{AB} = \frac{QR}{BC}$$

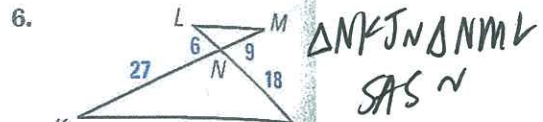
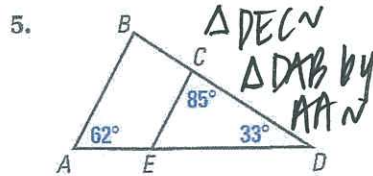
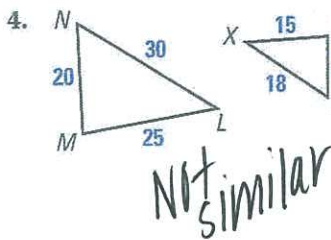
$$\frac{12}{24} = \frac{21}{x}$$

$$x = 17.5$$

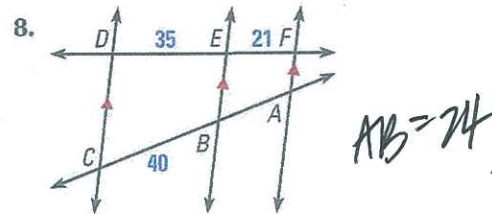
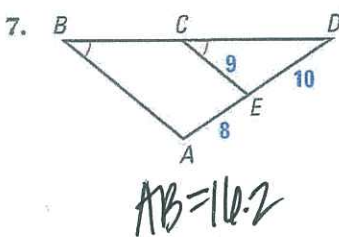


$$2.) \frac{PQ}{AB} = \frac{QR}{BC} = \frac{PR}{AC}$$

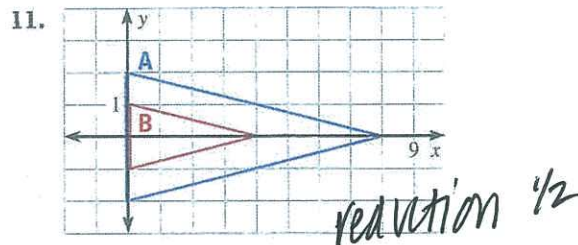
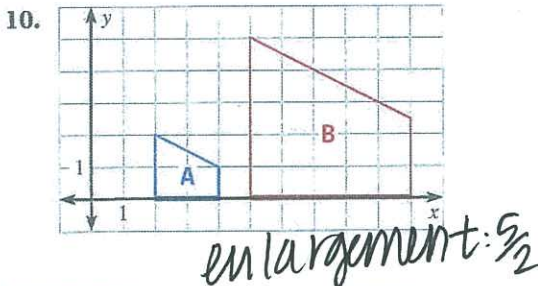
Determine whether the triangles are similar. If so, write a similarity statement and the postulate or theorem that justifies your answer.



In Exercises 7–9, find the length of \overline{AB} .



Determine whether the dilation from Figure A to Figure B is a reduction or an enlargement. Then find its scale factor.

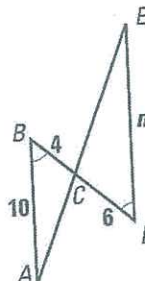


Use the diagram.

- a. Explain how you know that $\triangle ABC \sim \triangle EDC$.
- b. Find the value of n .
- c. The perimeter of $\triangle ABC$ is 22. What is the perimeter of $\triangle EDC$? Justify your answer.

$$\frac{4}{10} = \frac{22}{x}$$

$x = 33$
b/c ratio of perimeter is same as ratio of corresponding sides
STAY READY.



a.) $\angle B \cong \angle D$ (given)
 $\angle BCA \cong \angle DCE$ (vertical)
 $\triangle ABC \sim \triangle EDC$ (AA~TNM)

$$\frac{4}{10} = \frac{10}{x} \quad x = 15$$

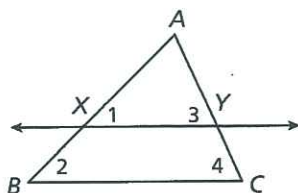
1. Which of the following transformations is a dilation?

- A. $(x, y) \rightarrow (2x, y)$
- B. $(x, y) \rightarrow (x + 2, y + 2)$
- ☒ C. $(x, y) \rightarrow (2x, 2y)$
- D. $(x, y) \rightarrow (x, y - 2)$

2. Juan is proving the Triangle Proportionality Theorem. Which reason should he use for Step 3?

Given: $\overleftrightarrow{XY} \parallel \overleftrightarrow{BC}$

Prove: $\frac{AX}{XB} = \frac{AY}{YC}$



Statements	Reasons
1. $\overleftrightarrow{XY} \parallel \overleftrightarrow{BC}$	1. Given
2. $\angle 1 \cong \angle 2$; $\angle 3 \cong \angle 4$	2. Corresponding Angles Theorem
3. $\triangle AXY \sim \triangle ABC$	3. ?

F. ASA Congruence Criterion

G. Definition of corresponding angles

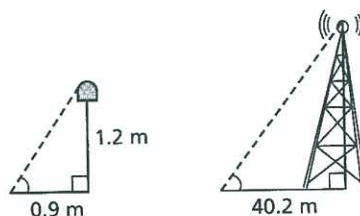
H. Definition of similarity

☒ J. AA Similarity Criterion

3. Katie uses geometry software to draw a line ℓ and a point O that is not on line ℓ . Then she constructs the image of line ℓ under a dilation with center O and scale factor 4. Which of the following best describes the image of line ℓ ?

- A. a line parallel to line ℓ ~~X~~
- B. a line perpendicular to line ℓ ~~X~~
- C. a line passing through point O
- ☒ D. a line that coincides with line ℓ

5. In order to find the height of a radio tower, you measure the tower's shadow and, at the same time of day, you measure the shadow cast by a mailbox that is 1.2 meters tall. The measurements are shown in the figure. What is the height of the tower?

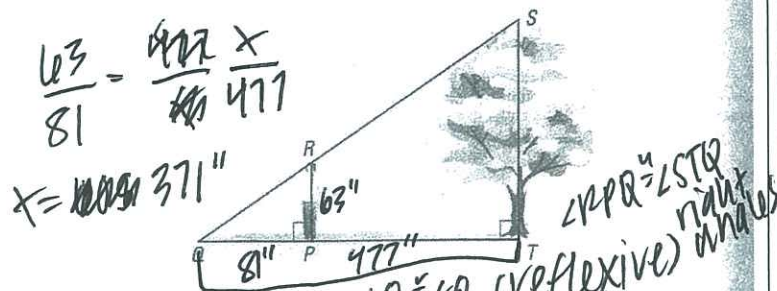


- A. 30.15 m
- B. 40.5 m
- C. 44.67 m
- ☒ D. 53.6 m

$$\frac{1.2}{0.9} = \frac{x}{40.2}$$

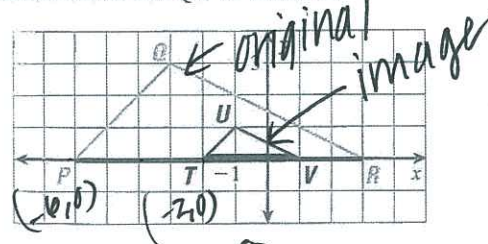
$$x = 53.6$$

To find the height of a tree, a student 63 inches in height measures the length of the tree's shadow and the length of his own shadow, as shown. The student casts a shadow 81 inches in length and the tree casts a shadow 477 inches in length.



- a. Explain why $\triangle PQR \sim \triangle TQS$. $\angle R \cong \angle Q$ (reflexive) $\angle P \cong \angle T$ (right angles)
- b. Find the height of the tree.
- c. Suppose the sun is a little lower in the sky. Can you still use this method to measure the height of the tree? Explain.

7. In the diagram, what is the scale factor of the dilation from $\triangle PQR$ to $\triangle TUV$?



- A. $\frac{1}{2}$
- B. $\frac{1}{3}$
- C. 2
- ☒ D. 3

$$\frac{-2}{-6} = \frac{1}{3}$$

$$\frac{-1}{-2} = \frac{1}{2}$$

$$\frac{0}{-2} = 0$$

$$\Delta PQR \cdot \frac{1}{3} = \Delta TUV$$

$\angle RPA$ & $\angle T$ will still be right angles
 $\angle Q$ will change when sun's position changes, but the angle will still be congruent to itself & Δ 's still similar
STAY READY.